NPS Form 10-900 (Oct. 1990)

United States Department of the Interior National Park Service

Copy #3 U.S. F. & OMB No. 10024-0018

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

entries and narrative items on commutation sheets (NFS Form 10-300a). Ose a typewhiter, those processor, or computer, to computer, to computer, to computer, to
1. Name of Property
historic nameDinkey Creek Bridge
other names/site number Fresno County Bridge No. 42C-04, (Caltrans assigned No.)
2. Location
street & number On abandoned spur road off Dinkey Creek Road
city or town Dinkey Creek Village, Sierra National Forest Uvicinity
state California code CA county Fresno code 019 zip code 936640
3. State/Federal Agency Certification
As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this \(\\ \) nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property meets \(\\ \\ \) does not meet the National Register criteria. I recommend that this property be considered significant \(\\ \\ \) nationally \(\\ \\ \) statewide \(\\ \\ \\ \) locally. (\(\\ \\ \\ \) See continuation sheet for additional comments.)
Signature of certifying official/Title Date
State of Federal agency and bureau
In my opinion, the property meets does not meet the National Register criteria. (See continuation sheet for additional comments.)
Signature of certifying official/Title Date
State or Federal agency and bureau
4. National Park Service Certification
I hereby certify that the property is: Signature of the Keeper Date of Action
entered in the National Register. See continuation sheet.
☐ determined eligible for the National Register ☐ See continuation sheet.
determined not eligible for the National Register.
removed from the National Register.
other, (explain:)

Dinkey	Creek	Bridge
Name of Prope	erty	

Fresno County, California County and State

Ownership of Property (Check as many boxes as apply)	Category of Property (Check only one box)	Number of Res (Do not include pre	sources within Propert eviously listed resources in the	ty ne count.)
☐ private	☐ building(s)	Contributing	Noncontributing	
☐ public-local☐ public-State	☐ district ☐ site	0	0	buildings
☐ public-State ☐ public-Federal	☐ site	0	0	sites
	object	1	0	structures
See continuatio	n sheet.	0	0	objects
		1	0	Total
Name of related multiple per (Enter "N/A" if property is not part	roperty listing of a multiple property listing.)	Number of cor in the National	ntributing resources pr Register	eviously listed
N/A		None		
6. Function or Use				
Historic Functions (Enter categories from instructions)		Current Functions (Enter categories from		
TRANSPORTATION/ vehicular related		TRANSPORTAT	MION/ pedestria	n related
With the second				
7. Description				
Architectural Classification (Enter categories from instructions)		Materials (Enter categories from	instructions)	
OTHER: Timber Bows	string Arch-Truss		NCRETE	
		wallsN/A		
		roofN	A	
		other, Truss	and Deck- WOOD	

Narrative Description (Describe the historic and current condition of the property on one or more continuation sheets.)

Attached

Fresno	County,	Calif	ornia
County and S			

8. S	tatement of Significance	
(Mark	icable National Register Criteria "x" in one or more boxes for the criteria qualifying the property	Areas of Significance (Enter categories from instructions)
for Na	ttional Register listing.)	ENGINEERING
☐ A Property is associated with events that have made		TRANSPORTATION
	a significant contribution to the broad patterns of our history.	
□В	Property is associated with the lives of persons significant in our past.	
⊠ C	Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.	Period of Significance 1938 - 1965
□ D	Property has yielded, or is likely to yield, information important in prehistory or history.	
	ria Considerations "x" in all the boxes that apply.)	Significant Dates 1938- Bridge constructed
Prop	erty is:	1965- Bridge closed to vehicles
□ A	owned by a religious institution or used for religious purposes.	1988- Bridge rehabilitated
□В	removed from its original location.	Significant Person (Complete if Criterion B is marked above) N / A
□ c	a birthplace or grave.	
□ D	a cemetery.	Cultural Affiliation N/A
□ E	a reconstructed building, object, or structure.	
□F	a commemorative property.	
□ G	less than 50 years of age or achieved significance within the past 50 years.	Architect/Builder T.K. May/U.S. Forest Service-CCC
Narra (Expla	ative Statement of Significance in the significance of the property on one or more continuation shee	ets.)
9. M	ajor Bibliographical References	
Bibile (Cite t	ography he books, articles, and other sources used in preparing this form or	n one or more continuation sheets.) Attached.
Prev	ious documentation on file (NPS):	Primary location of additional data:
	preliminary determination of individual listing (36	☐ State Historic Preservation Office
Г	CFR 67) has been requested	☐ Other State agency☐ Federal agency
	previously listed in the National Register previously determined eligible by the National	☐ Local government
<u></u>	Register	☐ University
	designated a National Historic Landmark	☐ Other
	recorded by Historic American Buildings Survey	Name of repository:
	#recorded by Historic American Engineering Record #1	Files of the Sierra National Forest 600 Tollhouse Rd., Clovis, CA 93611

Dinkey Creek Bridge Name of Property	Fresno County, California County and State
10. Geographical Data	
Acreage of Property	3
11. Form Prepared By	
name/title Donald W. Alden-Consulting organization self employed street & number 6809 Raldina Court city or town Carmichael	Bridge Engineer/Historian
Additional Documentation Submit the following items with the completed form:	
Continuation Sheets Maps A USGS map (7.5 or 15 minute series) indicating A Sketch map for historic districts and properties	
Photographs	
Representative black and white photographs of	the property.
Additional items (Check with the SHPO or FPO for any additional items)	
Property Owner (Complete this item at the request of SHPO or FPO.)	
name	
street & number	telephone
city or town	state zip code

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Projects (1024-0018), Washington, DC 20503.

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Dinkey Creek Bridge Fresno County, California

5 - CLASSIFICATION

Ownership of Property— The bridge and surrounding land are Federal public property and are administered by the Kings River Ranger District of the Sierra National Forest, U.S. Forest Service, U.S. Department of Agriculture. The headquarters of the Sierra National Forest is 1600 Tolllhouse Road, Clovis, CA 93611-0532.

10 - GEOGRAPHICAL DATA

Verbal Boundary Description— The boundary is about 95 feet long and 35 feet wide which encoumpasses only the bridge as shown on the sketch map of the immediate site which is included as Attachment #2.

Boundary Justification- The boundaries are the bridge itself. It is the only item of historic interest in the immediate vicinity.

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Dinkey Creek Bridge Fresno County, California

NARRATIVE DESCRIPTION

The Dinkey Creek Bridge is a single span timber truss of a unique bowstring-arch type constructed in 1938 as a highway bridge to carry McKinley Grove Road over Dinkey Creek. Its diagonal truss members are sloped toward the abutments in a Pratt truss configuration. The bridge spans 90 feet between unreinforced concrete abutment foundations. With trusses spaced 25'-2" apart, the bridge provides a 20 foot roadway width between timber wheelguard curbs.

The bridge is located over Dinkey Creek, a perennial creek, at an elevation of about 5,680 feet in the small recreational community of Dinkey Creek. The site is in a beautiful wooded valley not far from stands of giant Sequoia redwood trees of the McKinley and other groves on the western slopes of the Sierra Nevada Mountains about 42 straight-line miles east of Fresno, California.

The bridge was built in 1938 by the U.S. Forest Service, using Civilian Conservation Corps labor, to serve the increasing needs of recreational and commercial traffic; timber harvest and summer cattle grazing. It was closed to vehicular traffic in 1965 due to rot in the timber decking and in portions of some stringers and has served as a pedestrian only bridge since then. Vehicular traffic is now carried on a newer bridge about 0.35 mile downstream built in 1956.

The use of bowstring arch-trusses (see Attachment #4), although fairly common for more lightly loaded roof trusses, is somewhat rare for timber bridges. The designer of Dinkey Creek Bridge, Mr. T. K. May, believed it to be the only bridge of this type in California at the time it was built. During the Caltrans inventory survey of potentially historic bridges which was completed in 1987, no timber bridges of this type were found. This bridge was not included in that inventory because it no longer carried traffic and was no longer on a public highway. Because of it's unique design, the West Coast Lumberman's Association (WCLA) had Mr. May build a model of the bridge for display at the U.S. Forestry Laboratory in Richmond, California.1

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Dinkey Creek Bridge Fresno County, CA

The design is also historically significant because it was amoung the first in America to utilize metal devices embedded in the joints between timbers to increase the strength of bolted connections. The split-ring type (see Attachment #5) were used. The use of these devices made it feasible to use timber for all the new members in bowstring-type trusses because they enabled the spliced joints in the vertical members and lower chord to carry the large tensile forces. In earlier timber bridges, such as most covered bridges, metal rods rather than timbers were used for members subject to large tensile forces because of weakness in the timber joint designs then in use. These devices had been previously used in Europe and after undergoing tests by the Forest Products Laboratory of the Department of Agriculture to determine the best types for American woods and construction methods, their manufacture and use began in the United States. T.K. May, when employed by the California Division of Highways, designed the first bridge in the U.S. to utilize these timber connecting devices; the 1935 Dolan Creek Bridge on the Carmel-San Simeon Highway. 4 This bridge has since been demolished thus leaving the Dinkey Creek Bridge as quite possibly the oldest surviving timber bridge in the U.S. with timber connecting devices. The type of connectors used at Dinkey Creek consist of steel rings which fit into precut matching circular grooves which are cut into the abutting faces of timbers concentric to each bolt hole. The use of these devices has continued into present times for heavily loaded timber structures.

Mr T.K. "Tank" May was a bridge engineer who specialized in the design of timber bridges for the California Division of Highways (now called Caltrans) until he left this position in 1937 to accept a similar position with the West Coast Lumbermen's Association (WCLA) of Seattle, Washington. 2&7 The WCLA was a trade association whose mission was to promote the use of timber by increasing its reliability through strict grading rules and by developing and recommending typical designs and details for timber structures for use by engineers and architects.

Some researchers 1 have reported that the bridge was designed by T.K. May when he was employed by the California Division of

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Dinkey Creek Bridge Fresno County, CA.

Highways and constructed in 1934. Other records, including those in Caltrans files, indicate that May designed the bridge when employed by the WCLA and that construction was completed in This researcher believes that the 1938 date of construction is correct and that Mr. May designed the bridge as an employee of the Division of Highways. The original plans of the truss span are reported to be conserved at the Smithsonian Institution. 1 The confusion about who employed May at the time the bridge was designed was probably created by a booklet, "Highway Structures of Douglas Fir"8, published by the WCLA in which details of the design were shown on sheets with WCLA title However, these sheets are dated 1939 indicating that they were copied from the original plans after the bridge had been built. Furthermore, the WCLA was not in the business of providing professional engineering services while the Division of Highways often provided such services to other public agencies. The original plans for the concrete abutments, which are nearly always built first were prepared by Edgar C. Smith, the Fresno County Surveyor, and are dated June 1938. This further establishes that construction was probably accomplished during the summer of 1938 rather than in 1934.

The trusses were constructed of Douglas fir treated with a creosote preservative while the deck planking was untreated Douglas fir. 5 The use of preservative probably explains the unusually long survival of the trusses which had no protective covering. The timbers were precut and the trusses test assembled by the Colletti Construction Company of San Rafael, then taken apart and trucked to the bridge site for erection and assembly by a Civilian Conservation Corps (CCC) crew. The abutments (footings) were constructed of unreinforced Portland cement concrete placed by the Cyclopean method (cobblestones added by hand as the wet mix was placed in the forms). This was a common technique used to reduce the amount of cement required when the cost of cement was high relative to the cost of labor. It is now rarely used in this country.

The bridge was part of a project initiated to improve the accessibility of a large mountainous area rich in timber and

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Dinkey Creek Bridge Fresno County, CA

recreational resources. This project included forty-one miles of new road from the San Joaquin River to Dinkey which was to be built and maintained by Fresno County providing the Forest Service would construct a fifteen mile extension from Dinkey Creek to Long Meadow. Although photos indicate that recreational campers using automobiles reached as far into the Sierra as Dinkey Meadows over early wagon roads as early as 1919, the recreational potential of the Dinkey Creek area was not fully realized until after this project was completed.

This bridge construction project exemplifies the many public works projects funded by the federal government during the economic depression of the 1930's to relieve unemployment. Designs were tailored to utilize available local manpower in labor intensive projects. In this case, the bridge was designed so that it could be erected and assembled primarily with hand-tools by relatively unskilled trainees from nearby CCC camps at Rush Creek and Oak Flat. $^{1\&3}$

The present condition of the bridge is very good considering that the trusses have not been covered with a protective roof. The unusually good apparent condition (please note that no core drilling was done to check for core rot) of the timber truss members after 56 years of exposure can be attributed to the preservative treatment which Mr. May specified. All of the 3x12" untreated timber decking, wheelguards, railings and most of the 4x15" longitudinal stringers in the end panels (those adjacent to the ends of the bridge) had developed serious rot and in 1988 were replaced with preservative treated timbers. Replacement timbers of the same dimensions as the originals were used so as not to compromise the historic integrity of the bridge. 1988, a concrete erosion protection wall was placed in the streambed in front of the west abutment to stop the erosion which was threatening to undermine the footing. This wall is not easily visible and does not affect the appearance of the bridge.

The site of the bridge is in an area which has experienced an interesting historic chronology which is well documented in Reference 1. It began about 1800 when early Spanish explorers, Gabriel Moraga and others, penetrated inland from the coast to explore the San Joaquin Valley. This was followed in turn by fir trappers, then by gold prospectors and miners following the 1848

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Narrative Concluded Dinkey Creek Bridge Fresno County, CA

discovery of gold in California. Then came sheep and cattle ranchers from the valley seeking summer range for their animals and by the 1930's timber harvesting and sawmills came into full swing. With accessibility by automobile, recreational activities dramatically increased for cabin builders, campers, hikers, fishermen, etc. Located near the bridge are Camp Fresno, a municipally operated summer camp for residents of the City of Fresno, the YMCA camp, Mar-Y-Mac, and the Girl Scout camp, El-O-Win.

The name "Dinkey" by which the creek, lake, meadow and nearby mountain peak are known originated from a dog by that name. Two versions of how this occured have been recorded. One version, as recorded by Farquhar⁹, has it that in 1863 a party of four hunters and their small dog, Dinkey, had a fight with a grizzly bear. The dog was injured and the men, Joe Medley, Marion Medley, Joe Folsom and Al Yarborough, then named the place and the creek Dinkey. The other version is attributed to the recollections of Frank Dusy. Dusy was and early sheep rancher and gold prospector in the area and built the first cabin at Dinkey Meadow. He reported that in 1863 he was saved from an attacking bear by his small dog, Dinkey, who grabbed the bear by the hind leg giving Dusy time to reach his rifle and dispatch the bear. Unfortunately Dinkey was killed in the struggle, so Dusy named the area for the dog.

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Dinkey Creek Bridge Fresno County, CA

STATEMENT OF SIGNIFICANCE

The Dinkey Creek Bridge, built in 1938, is an excellent example and one of the few extant of the many timber truss bridges built in California during the depression period of the According to it's designer, T.K. May, who was an engineer who specialized in the design of timber structures, it was the first bowstring arch-truss type (see Attachment 4) to be built in California. It was also one of the first timber structures to be built in the United States to utilize steel split-ring timber connecting devices. These devices increase the tension capacity of joints in timber structures, thus making it possible to design structures such as the Dinkey Creek Bridge without using metal rods for the main tension members of the This bridge is also representative of the many labor public works projects constructed with Civilian Conservation Corps labor under the Federal Government's program to relieve unemployment of that era and to increase the accessibility of wilderness areas for recreational and commercial benefit. The Dinkey Creek Bridge was a component of a joint Fresno County-US Forest Service highway project which increased the accessability of a large forested area on the western slopes the Sierra Nevada Mountains in central California. The bridge carried vehicular traffic until 1965 when it was closed to all but pedestrian traffic due to rot in the timber deck system. In 1988 the deck planking and many timber stringers were replaced with timbers which matched the original but it continues to serve only pedestrian and bicycle traffic. Vehicular traffic is carried on a newer 1956 steel bridge which is downstream and out of sight of the older bridge. The bridge possess integrity of location, design, setting, materials, workmanship, feeling and association and embodies the distinctive characteristics of a type, period and method of construction and has long been considered an important historic resource by the local community. It meets the National Register Criterion C for listing in the National Register of Historic Places in the area of Engineering.

In 1988 considerable restoration work was done as necessary to return this bridge to it's current very good condition. This

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Dinkey Creek Bridge Fresno County, CA

work, which is described in Section 7, was all done in such a way that the historic characteristics of the bridge were not appreciably affected.

A few more bowstring arch-truss timber bridges were built in California following the Dinkey Bridge. An example, and one of the very few if not the only other survivor, is the 1951 West Walker River Bridge on Cunningham Lane near Coleville in Mono County. This bridge advanced bridge technology another notch by the use of uniformly curved glued laminated timbers for the upper chords of the trusses.

The successful use of split-ring timber connectors on this bridge contributed to their adoption as a standard for use by the engineering profession. They continue to be used to this day for heavily loaded timber structures.

The building of this bridge was a significant factor in the development of the community of Dinkey Creek including the surrounding summer camps and cabins. And it has retained it's cultural affiliation with them. It is a favorite place for walkers and bikers to visit and for young fishermen to fish beneath. It is featured on postcards, tee shirts and hats sold to campers and tourists at the lone Dinkey store. The bridge was described in the 1971 Sunset travel book, "Back Roads of California", as a site worth visiting. The bridge helps convey a sense of local community identity, in part, because of its unique architectural characteristics and local history.

Mr. T.K. "Tank" May, the designer, was well respected as a specialist in the design of timber structures. Although he could be considered to be a "Master" because of unique nature of his work, he was probably not the equal of the many true giants of bridge engineering of his generation. He was employed by the Bridge Department of the California Division of Highways where he designed many timber structures, including a 180 foot long 1935 timber arch over Dolan Creek on the San Simeon Highway,

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Dinkey Creek Bkridge Fresno County, CA

(US 1).⁴ This bridge has since been removed and was possibly the first in the United States to utilize metal joint connectors; a technology which was pioneered by the California Division of Highways and Mr. May. In 1937 May took a similar pósition with the West Coast Lumberman's Association (WCLA) in Seattle.^{2&7} He later moved with the WCLA to Portland, OR and continued after the WCLA became the Western Wood Products Association. The majority of the drawings in Reference No.8 were prepared by Mr. May. He died in Portland on July 26, 1985.⁷

Several previous researchers have concluded that the Dinkey Creek Bridge is eligible for listing on the National Register of Historic Places under Criterion C. Two examples are documented in the the June 10,1988 letter by Paul A. Rich, Sierra National Forest Resource and Planning Officer, and the June 23, 1988 resposne by Kathryn Gualtieri, State Historic Preservation Officer. These are included as Attachments 6 and 7.

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Dinkey Creek Bridge Fresno County, California

BIBILOGRAPHY

- 1. Johnson, Ann, A Review of the Historic Resources of the Dinkey Creek Hydroelectric Project, prepared for the Kings River Conservation District in Fresno, California by Theodoratus Cultural Research, Inc., of Fair Oaks, Calif., Ann Hagerman Johnson, Ph.D., Principal Investigator, November 1982.
- 2. Notes from a personal interview with Ralph Hutchinson, a retired Caltrans bridge engineer and co-worker of T.K. May, by D.W. Alden, November 1989, retained in files of D.W. Alden.
- 3. LaJeunesse, R.M. and LaJeunesse, U.M., <u>Cultural Overview of Historic Structures in the Dinkey Creek Hydroelectric Project Area</u>, 1980.
- 4. Mitchell, Stewart, <u>New Type Timber Arch Bridge Spans Dolan Creek Gorge on Coast Highway</u>, California Highways and Public Works, February 1935, a magazine published by the California Division of Highways.
- 5. <u>Bridge Maintenance Book for Bridge 42C-04, Dinkey Creek Bridge</u>, as compiled by and retained in the files of the Division of Structures of the California Dept. of Transportation.
- 6. Finch, James Kip, <u>The Story of Engineering</u>, Anchor Books, Doubleday & Co. Inc., Garden City, New York, 1960.
- 7. Notes from personal telephone (503-224 3930) conversation with Diana Sprague, Librarian/Historian of the Western Wood Products Association (successor to the West Coast Lumberman's Assn.) of Portland OR., on August 2 & 3, 1994 by D.W. Alden and retained in the files of D.W. Alden.
- 8. <u>Highway Structures of Douglas Fir</u>, a booklet published by the West Coast Lumberman's Assn. about 1948.
- 9. Farquhar, Francis, Place Names of the High Sierra, 1948.

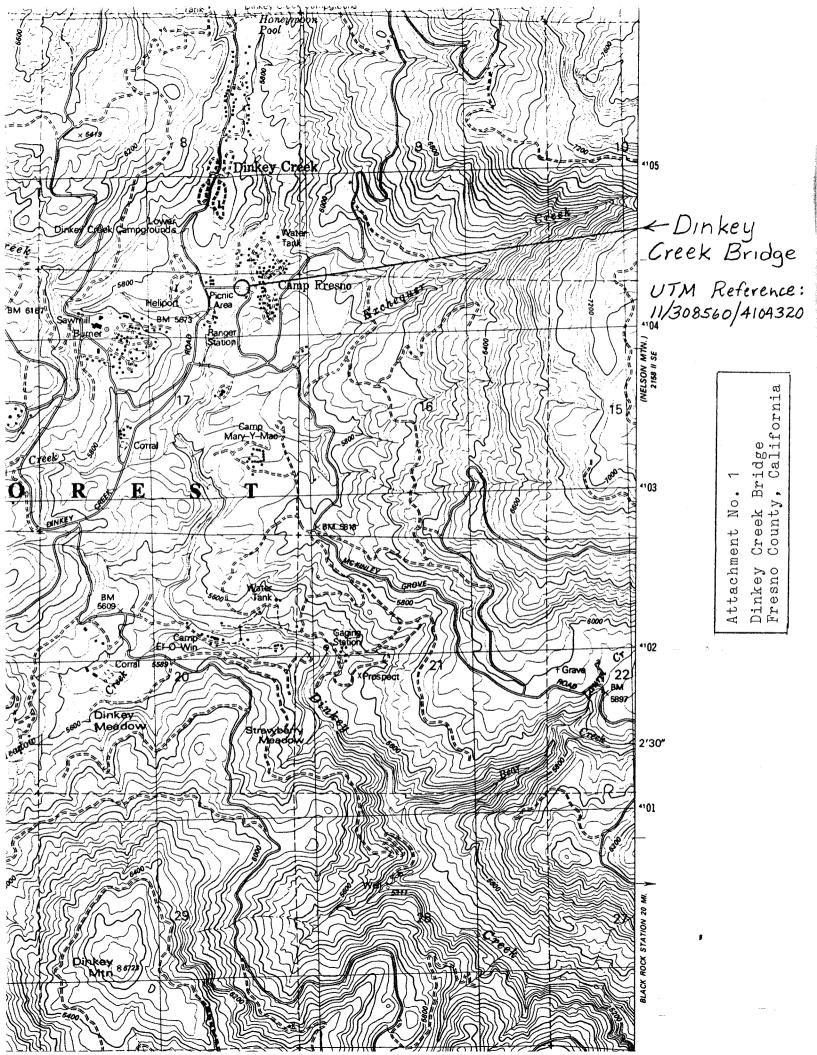
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Dinkey Creek Bridge Fresno County, California

ATTACHMENTS

- 1. Topographic Map, Dinkey Creek U.S.G.S. 7.5 Minute.
- 2. Sketch map of bridge site.
- 3. Photos, archival quality.
- 4. HAER Truss Identification Sheet.
- 5. WCLA Timber Connector Identification Sheet.
- 6. Rich, Paul A., letter of June 10, 1988.
- 7. Gualtieri, Kathryn, letter of June 23, 1988



ATTACHMENT NO. 3 - PHOTOS

Dinkey Creek Bridge, Fresno County, California (See back side of photos for data)



Photo No. 1 - Looking North/upstream.

Attachment No. 3, Cont.

Dinkey Creek Bridge, Fresno County, California



Photo No. 2 - Looking West